

WHAT IS CLAIMED IS:

1. A recording-medium identification device for identifying a recording medium type, the recording-medium identification device comprising:

light-emitting means for reflecting light off a surface of the recording medium, said light emitting means applying light on the surface in a predetermined direction other than a direction normal to the surface;

detection means for detecting an amount of light reflected in a backward direction of the light emitted by said light emitting means; and

identification means for identifying the type of the recording medium based on the amount of light detected by said detection means.

2. A recording-medium identification device according to Claim 1, wherein said detection means further comprises specularly-reflected-light detection means for detecting the amount of specularly reflected light of the light reflected off the surface of the recording medium.

3. A recording-medium identification device according to Claim 1, wherein said detection means further comprises diffusely-reflected-light-detection means for detecting an

amount of diffusely reflected light of the light reflected off the surface of the recording medium, the diffusely reflected light being reflected at a predetermined angle other than the angle at which the light applied by the light emitting means is made incident.

4. A recording-medium identification device according to Claim 1, wherein the light emitting means is a laser light.

5. A recording-medium identification device according to Claim 1, wherein said detection means includes a semiconductor light receiving element for detecting the amount of received light reflected off the surface of the recording medium.

6. A recording-medium identification device according to Claim 1, further comprising a reflector positioned between said light emitting means and the recording medium to reflect in a predetermined direction light reflected off the surface of the recording medium.

7. A recording-medium identification device according to Claim 6, wherein said reflector is a half mirror.

8. A recording-medium identification device for identifying a recording medium type, the recording medium identification device comprising:

a light emitting unit for reflecting light off a surface of the recording medium, said light emitting unit positioned to direct light onto the surface of the recording medium in a predetermined direction other than a direction normal to the surface of the recording medium;

a specularly-reflected-light receiving element provided at a predetermined position so as to receive specularly reflected light at a predetermined angle the same as that at which the light emitted from the light emitting unit was made incident;

a half mirror positioned between the light emitting unit and the recording medium to reflect light in a direction generally perpendicular to the direction of the light emitted from the light emitting unit;

a coherent-backscattering-of-light receiving element for receiving light reflected from said half mirror; and

identification means for identifying the type of recording medium based on the amount of light detected by said specularly-reflected-light receiving element and said coherent-backscattering-of-light receiving element.

9. A recording-medium identification device according

to Claim 8, wherein said half mirror and said coherent-backscattering-of-light receiving element are combined and movable in unison.

10. A recording-medium identification device according to Claim 8, wherein said light emitting unit is movable.

11. A recording-medium identification device according to Claim 8, further comprising a diffusely-reflected-light receiving element provided at a position so as to receive diffusely reflected light reflected at a predetermined angle other than the angle at which the light emitted from the light emitting unit is made incident, wherein said identification means also bases the identification of the type of recording medium on an amount of light detected by said diffusely-reflected-light receiving element.

12. A recording-medium identification device for identifying a recording medium type, the recording medium identification device comprising:

a light emitting unit for reflecting light off a surface of the recording medium, said light emitting unit positioned to direct light onto the surface of the recording medium in a predetermined direction other than a direction normal to the surface of the recording medium;

a specularly-reflected-light receiving element provided at a predetermined position so as to receive specularly reflected light at a predetermined angle the same as that at which the light emitted from the light emitting unit was made incident;

a half mirror positioned between the light emitting unit and the recording medium to reflect light in a direction generally perpendicular to the direction of the light emitted from the light emitting unit;

a movable coherent-backscattering-of-light receiving element for receiving light reflected from said half mirror, wherein said coherent-backscattering-of-light receiving element is movable between a position where it receives light reflected from said half mirror and a position where it receives diffusely reflected light reflected at a predetermined angle other than the angle at which light emitted from the light emitting unit is made incident; and

identification means for identifying the type of recording medium based on an amount of light detected by said specularly-reflected-light receiving element and an amount of light detected by said coherent-backscattering-of-light receiving element at the end of the two positions.

13. A recording-medium identification device for identifying a recording medium type, the recording-medium

identification device comprising:

a light emitting unit for reflecting light off a surface of the recording medium, said light emitting unit applying light on the surface in a predetermined direction other than a direction normal to the surface of the recording medium;

a half-mirror positioned between said light emitting unit and the recording medium to reflect light in a direction generally perpendicular to the direction of the light emitted from the light emitting unit;

a single light receiving element, said light receiving element movable between a first position where said light receiving element receives specularly reflected light reflected off the recording medium, a second position where said light receiving element receives diffusely reflected light reflected off the recording medium and a third position where said light receiving element receives coherent backscattering of light reflected off said half mirror; and

identification means for identifying the type of recording medium based on respective outputs of an amount of light detected by said light receiving element at the first position, the second position and the third position.

14. A recording-medium identification method for

identifying a recording medium type using a recording-medium identification device comprising a light emitting unit for reflecting light off a surface of the recording medium, said light-emitting unit applying light on the surface in a predetermined direction other than a direction normal to the surface; the recording-medium identification method comprising the steps of:

detecting an amount of light reflected in a backward direction of the light emitted by said light emitting unit; and

identifying the type of the recording medium based on the amount of light detected in the step of detecting an amount of light.

15. A recording-medium identification method as Claim 14, wherein, in the step of detecting an amount of light, an amount of light specularly reflected off the surface of the recording medium is further detected.

16. A recording-medium identification method as Claim 14, wherein, in the step of detecting an amount of light, an amount of light diffusely reflected off the surface of the recording medium at a predetermined angle other than the angle at which the light applied by the light emitting unit is made incident is further detected.